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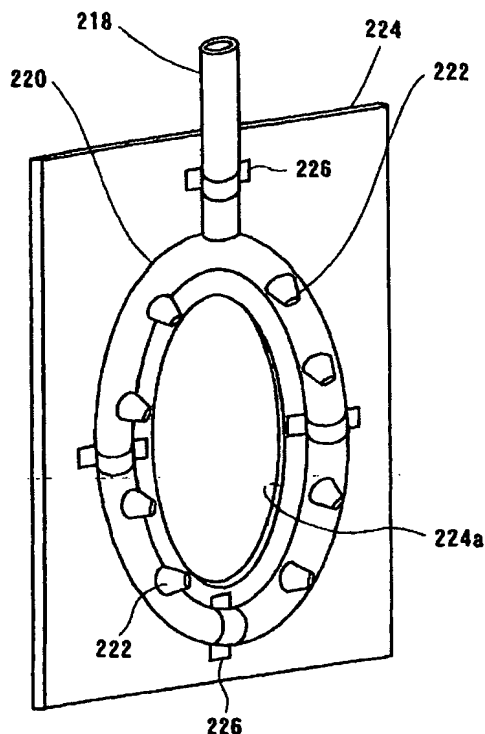
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[Continued on next page]

(54) Title: **PLATING APPARATUS**



(57) Abstract: The present invention is concerned with a plating apparatus for use in forming a plated film in trenches, via holes, or resist openings that are defined in a surface of a semiconductor wafer, and forming bumps to be electrically connected to electrodes of a package, on a surface of a semiconductor wafer. The plating apparatus (170) has a plating tank (186) for holding a plating solution (188), a holder (160) for holding a workpiece (W) and bringing a surface to be plated of the workpiece into contact with the plating solution (188) in the plating tank (186). A ring-shaped nozzle pipe (220) having a plurality of plating solution injection nozzles (222) for injecting the plating solution (188) to the surface to be plated of the workpiece held by the holder (160) to supply the plating solution (188) into the plating tank (186), or a stirring mechanism having a stirring vane are disposed in the plating tank (186).



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**AMENDED CLAIMS**

[received by the International Bureau on 28 April 2005 (28.04.2005);  
original claim 11 amended; original claims 12, 20 and 21 cancelled;  
remaining claims unchanged (2 pages)]

6. A plating apparatus according to claim 1, wherein the  
workpiece is disposed horizontally.

5           7. A plating apparatus according to claim 1, wherein the  
workpiece is disposed vertically.

8. A plating apparatus according to claim 1, wherein the  
nozzle pipe is shaped to extend along an outer profile of the  
10 workpiece.

9. A plating apparatus according to claim 1, wherein the  
nozzle pipe is movable relatively to the workpiece held by the  
holder.  
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10. A plating apparatus according to claim 1, wherein the  
nozzle pipe and/or the plating solution injection nozzles are  
made of an electrically insulating material.

20           11. (Amended) A plating apparatus, comprising:  
a plating tank for holding a plating solution; and  
a stirring mechanism having a stirring vane immersed in  
the plating solution in the plating tank and disposed in a position  
facing a surface to be plated of a workpiece, the stirring vane  
25 being reciprocally movable parallel to the surface to be plated  
of the workpiece to stir the plating solution;

wherein the stirring vane has irregularities on at least  
one side thereof, and the irregularities comprise a succession  
of triangular or rectangular saw-tooth irregularities, or a  
30 number of narrow grooves defined at predetermined intervals.

12. (Cancelled)

19. A plating apparatus according to claim 18, wherein the stirring mechanism has a plurality of the stirring vanes.

5           20. (Cancelled)

21. (Cancelled)